**Listing of Claims**

Claims 1-36 (Canceled)

37. (Currently amended) A method for providing electrical energy to an electrical device in an environment having a first and a second temperature region comprising the steps of:

providing a means for transmitting ambient energy collected in the first temperature region,

providing a thermoelectric device having a plurality of thermoelectric couples, the thermoelectric couples comprising:

a thin film p-type thermoelement, a thin film n-type thermoelement and an electrically conductive member electrically connecting a first end of the p-type thermoelement with a second end of the n-type thermoelement, wherein the thermoelectric couples are formed on a single flexible substrate and the flexible substrate is in a coil configuration;

wherein the p-type or the n-type thermoelements comprise $Bi_xTe_y$, $Sb_xTe_y$, or $Bi_xSe_y$ wherein x and y form a non-stoichiometric compound wherein *x* is about 2 and *y* is about 3 and have L/A ratios from about 100 $cm^{-1}$ to about 10,000 $cm^{-1}$;

providing the means for transmitting the ambient energy collected in the first temperature region in communication with a first side of the thermoelectric device, and

providing a second side of the thermoelectric device in communication with the second temperature region.

38. (Previously presented) The method of claim 37 further comprising providing a power output of from 50 µW to 1 W from the thermoelectric device.

39. (Previously presented) The method of claim 38 wherein the p-type or the n-type thermoelements are at least about 0.001 mm in thickness.

40. (Previously presented) The method of claim 37 wherein the thermoelectric couples are assembled in alternating p- and n-type arrays connected electrically in series, parallel, and in combinations thereof.

41. (Previously presented) The method of claim 37 wherein the p-type thermoelements are selected from the group consisting of bismuth telluride, lead telluride, tin telluride, zinc antimonide, cerium-iron antimonide, silicon-germanium, and combinations thereof.

42. (Previously presented) The method of claim 37 wherein the n-type thermoelements are selected from the group consisting of bismuth telluride, lead telluride, cobalt antimonide; silicon-germanium, and combinations thereof.

43. (Previously presented) The method of claim 37 wherein the thermoelectric elements comprise thin film semiconductors selected as having p-type materials fabricated of bismuth telluride, lead telluride, tin telluride, zinc antimonide, cerium-iron antimonide, silicon-germanium, and combinations thereof sputter deposited as thin films on a substrate; and n-type semiconductors fabricated of bismuth telluride, lead telluride, cobalt antimonide, silicon-germanium and combinations thereof sputter deposited as thin films on a substrate.

44. (Previously presented) The method of claim 43 wherein the thin film semiconductors are selected as bismuth telluride sputter deposited as thin films on the single flexible substrate.

45. (Previously presented) The method of claim 37 further comprising providing a second means for transmitting ambient energy collected in the second temperature region in communication with the second side of the thermoelectric device and in communication with the second temperature region.

46. (Original) The method of claim 37 wherein the step of transmitting ambient energy is performed by means selected from collecting ambient energy, focusing ambient energy, transferring ambient energy, and combinations thereof.

47. (Original) The method of claim 46 wherein the step of transferring ambient energy is performed by means selected from convection, conduction, radiation, and combinations thereof.

48. (Original) The method of claim 37 wherein the temperature difference between the first temperature region and the second temperature region is between about -18°C and 38°C.

49. (Original) The method of claim 37 wherein the temperature difference between the first temperature region and the second temperature region is between about -18°C and 10°C.

50. (Previously presented) An apparatus for generating electrical energy from an environment having a first temperature region and a second temperature region comprising a thermoelectric device having a first side and a second side wherein the first side is in communication with a first means for transmitting ambient thermal energy collected in the first temperature region and the second side is in communication with a second means for transmitting ambient energy collected in the second temperature region in communication with the second side of the thermoelectric device;

the first means for transmitting ambient thermal energy comprising a high-temperature heat pipe connected to a hot connection of the thermoelectric device to operate in the Seebeck mode to transfer heat spontaneously by direct conduction to and from the thermoelectric device utilizing a working fluid;

the apparatus not including an electrical and/or mechanical power device, other than gravity, external to the high temperature heat pipe acting on the working fluid to transfer heat to and from the thermoelectric device; and

the thermoelectric device selected from the group consisting of metallic wire thermocouples and discrete thin film thermoelements formed of semiconductor materials, the thin film thermoelements assembled in alternating p- and n-type arrays, and combinations thereof.

51. (Previously presented) The apparatus of claim 50 wherein the second means for transmitting ambient energy collected in the second temperature region comprises a low-temperature heat pipe connected to a cold connection of the thermoelectric device, and wherein the low-temperature heat pipe transfers heat to and from the thermoelectric device by a phase change of a working fluid.

52. (Previously presented) The apparatus of claim 50 wherein the thermoelectric device comprises metallic wire thermocouples selected from the group consisting of iron-constantan; copper-constantan; chromel-alumel; chromel-constantan; platinum-rhodium alloys and tungsten-rhenium alloys, and combinations thereof.

53. (Previously presented) The apparatus of claim 50 wherein the thin film thermoelements of the thermoelectric device are assembled in alternating p- and n-type arrays and connected electrically in series, parallel, and in combinations thereof.

54. (Original) The apparatus of claim 53 wherein the p-type arrays are selected from the group consisting of bismuth telluride, lead telluride, tin telluride, zinc antimonide, cerium-iron antimonide, silicon-germanium, and combinations thereof.

55. (Previously presented) The apparatus of claim 53 wherein the n-type arrays are selected from the group consisting of bismuth telluride, lead telluride, cobalt antimonide; silicon-germanium, and combinations thereof.

56. (Previously presented) The apparatus of claim 51 wherein the thin film thermoelements are formed of bismuth telluride sputter deposited as thin films on a flexible substrate.

57. (Previously presented) The apparatus of claim 51 wherein the phase change of the working fluid is a change from a liquid to a vapor and/or from a vapor to a liquid.

58. (Original) The apparatus of claim 50 wherein the means for transmitting ambient energy is selected from an ambient energy collection means, an ambient energy focusing means, an ambient energy transmission means, and combinations thereof.

59. (Original) The apparatus of claim 58 wherein the ambient energy transferring means is selected from a convection means, a conduction means, a radiation means, and combinations thereof.

60. (Original) The apparatus of claim 50 further comprising a means for alternately storing and discharging electrical energy produced by the thermoelectric device.

61. (Previously presented) The apparatus of claim 50 wherein a means for alternately storing and discharging electrical energy produced by the thermoelectric device is selected from the group consisting of a battery, a capacitor, a supercapacitor, and combinations thereof.

62. (Previously presented) The apparatus of claim 60 further comprising at least one sensor powered by electrical energy discharged from the means for alternately storing and discharging electrical energy produced by the thermoelectric device.

63. (Original) The apparatus of claim 62 further comprising at least one transmitter powered by electrical energy discharged from the means for alternately storing and discharging electrical energy produced by the thermoelectric device and capable of transmitting data gathered by the sensor.

64. (Original) The apparatus of claim 50 further comprising at least one voltage amplifiers for amplifying the voltage of electrical energy generated by the thermoelectric device.

65. (Original) The apparatus of claim 62 further comprising at least one microprocessor capable of processing the data gathered by at least one of the sensors.

66. (Original) The apparatus of claim 62 further comprising at least one data storage means capable of storing the data gathered by at least one of the sensors.

Claims 67-85 (Canceled)